

## CROSSOCHEILUS PERIYARENSIS, A NEW CYPRINID FISH FROM THANIKKUDY (THEKKADY), KERALA, INDIA<sup>1</sup>

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(With a plate)

*Crossocheilus periyarensis* is described as a new species of Cyprinid fish from the Periyar River of the High Ranges of the Western Ghats of Kerala State, South India, from four specimens. It is characterised as follows: 8 branched rays in the dorsal fin, 34-36 scales on lateral line, 4.5 series of scales from origin of dorsal to lateral line and 3.5 between lateral line and origin of pelvic fin, 15-17 gill rakers on the first arch, a pair of rostral and maxillary barbels and prominent horny tubercles on the snout and cheek in the males, upper half of body brownish black, lower yellowish, dorsal and caudal fins yellowish grey, the other fins clear. No lateral stripe or black spot on caudal base as in *C. latius latius*.

### INTRODUCTION

Three genera of the subfamily Cyprininae occur in South and South-eastern Asia, *Crossocheilus* Kuhl and Van Hasselt in Van Hasselt, 1823, *Epalzeorhynchus* Bleeker, 1855, and *Paracrossocheilus* Popta, 1904, characterised by having the upper lip coalescent with the skin of the snout (not separated from the snout as in most other cyprinids) and crenulated. These three genera are, therefore, grouped into the *Crossocheilus* group (Banarescu 1986). Of these genera, *Epalzeorhynchus* differs from *Crossocheilus* in having a pair of movable, stiff lobes on the sides of the snout (Weber and de Beaufort 1916, Smith 1945) and a narrow frenulum connecting both lips. In *Crossocheilus*, the narrow frenulum connects the upper lip with the lower jaw, not the lower lip. *Paracrossocheilus* differs from both in having the lips continuous at the corners instead of the lips being connected by a narrow frenulum as in *Crossocheilus*.

In addition to the new species described here, the following eight species and subspecies of *Crossocheilus* are recognised: 1. *C. cobitis* (Bleeker, 1860); 2. *C. gnathopogon* W. and de Beaufort, 1916; 3. *C. horai* Banarescu, 1986; 4. *C. langei* (Bleeker,

1860); 5. *C. latius latius* Hamilton, 1822; 6. *C. latius diplocheilus* (Heckel, 1853); 7. *C. oblongus* (Valenciennes, 1842) and 8. *C. reticulatus* (Fowler, 1934).

In the course of our studies of the fishes of Periyar River in Kerala State, South India, four adult male specimens of *Crossocheilus* were obtained which are distinct from all the so far known species of the genus. It is described here as a new species.

### MATERIAL AND METHODS

The material examined in this study consists of four specimens measuring 98.0 to 131.0 mm SL collected by cast net in the fast flowing Periyar at Thanikkudy, about seven km above the Thekkady Lake. The description is based on measurements with dial calipers with an accuracy of 0.02 mm. Data are presented as percentages of SL and HL, with the range followed by the mean in parentheses.

### ***Crossocheilus periyarensis* sp. nov.**

**Diagnosis:** A species of *Crossocheilus* having 8 branched rays in the dorsal fin, 34-36 scales in lateral line, 15-17 gill-rakers on the first arch, both pair (rostral and maxillary) of barbels and horny tubercles on the snout and cheek in the males.

**Holotype:** SRS/ZSI (Southern Regional Station of Zoological Survey of India) No. F. 3508,

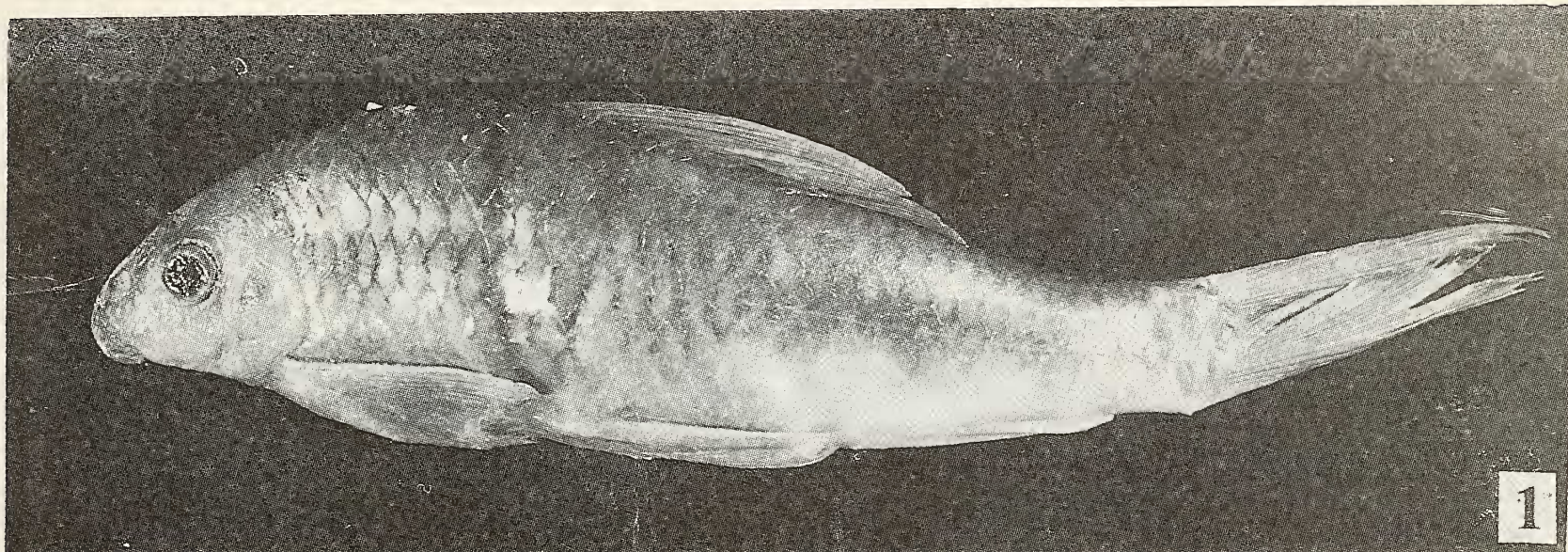
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Menon & Jacob: *Crossocheilus periarensis* sp. nov.



Figs. 1-3. *Crossocheilus periarensis* sp. nov.

1. Lateral view (98.0 mm SL); 2. Ventral view of mouth, enlarged; 3. Lateral view of head, enlarged.



131.0 mm SL, Periyar river, Thanikkudy (Thekkady), Kerala State, South India, collected by P.C. Jacob, October, 1990.

**Paratypes:** 3 specimens, SRS/ZSI No. F. 3509, 98.0 to 115.0 mm SL, same data as holotype.

**Description:** Based on 4 specimens (holotype and 3 paratypes) D.3/8, A.3/5, P.1/12, V.1/7, L.1. 34-36, Ltr. 5/1/5, Phar. Teeth 5.4.2/2.4.5.

Body moderately elongate, somewhat compressed, dorsal and ventral profiles convex. Depth of body 24.5-27.5 (M=25.6)% SL, length of head 19.1-20.2 (M=19.6). Snout obtusely rounded with prominent nuptial tubercles developed in males, densely covering on snout and cheek, its length 8.8-10.4 (M=9.8)% SL, 45.0-54.5 (M=50.5)% HL. Eye shorter than snout, its diameter 20.3-27.5 (M=24.8)% HL and 45.8-68.7 (M=56.4)% interorbital width. Paired rostral and maxillary barbels, the rostral ones longer but much shorter than eye, its length 11.1-15.0 (M=12.6)% HL. Mouth wide, covered by the papillated upper lip, lower lip fleshy, without post-labial groove and not connected with the upper lip at corners.

Caudal peduncle length 18.6-20.4 (M=19.3)% SL; its least height 59.1-68.7 (M=63.3)% HL, 50.0-55.0 (M=53.0)% of its own length.

**Squamation:** Tube-bearing scales on lateral line 34 to 36, scales in transverse series from midline of back to abdomen 5/1/5 with 4.5 series from origin of dorsal to lateral line and 3.5 between lateral line and origin of ventral fin, predorsal scales 12, circumpeduncular scales 13-14.

**Fins:** Dorsal origin much nearer to tip of snout than to base of caudal, over 8th scale of lateral line: dorsal margin of fin concave, its height more than length of head, 23.5-27.5 (M=25.8)% SL; anal origin opposite 20th scale of lateral line, its longest branched ray 22.2-31.5 (M=27.7)% HL. Pectoral and pelvic fins subequal, slightly smaller than head, length of pectoral 16.4-20.9 (M=18.8)% SL. Pelvic origin under 11th scale of lateral line, length of ventrals 17.6-21.4 (M=19.1)% SL. Caudal deeply forked, longer than head, lobes pointed. Pre-dorsal distance 41.4-44.1 (M=42.7)% SL, pre-pelvic distance 43.3-47.1 (M=45.1), pectro-pelvic distance

24.4-30.3 (M=27.2), pelvic-anal distance 22.0-24.5 (M=23.5).

Body completely covered with moderately large scales except on the chest which is covered by smaller scales. The focal zone of scale is eccentric and the upper part of posterior side of scales is thickly pigmented.

**Etymology:** Named after the Periyar River in which it occurs.

**Coloration:** Upper half of body brownish black, lower yellowish, no lateral stripe or black spot on caudal base as in *Crossocheilus latius*, fins clear, the dorsal and caudal fins yellowish grey.

**Distribution:** Known only from the Periyar drainage at Thanikkudy, Kerala, South India.

**Remarks:** Geographically, the closest relative of *Crossocheilus periyarensis* appears to be *C. latius* Hamilton which is known from the Eastern Himalayas (Ganges and Brahmaputra drainages), Orissa (Mahanadi drainage) and the Bombay Ghat portion of Western Ghats (Krishna drainage). Like *C.l. latius* it has 8 branched rays in the dorsal fin and both pairs (rostral and maxillary) of barbels but there is no similarity in colour and nuptial tubercles on the snout and cheek present in the males of *C. periyarensis*.

Hora (1937, 1950) has shown the occurrence in south-western India, especially in the rivers of the Western Ghats, of a number of freshwater fishes closely related to Eastern Himalayas, Indo-China and the Indonesian Archipelago.

The origin of *Crossocheilus* seems to be in South China, most probably Yunnan from where it had spread westwards along the Himalayas as far as Seistan and Afghanistan during the Pliocene and southwestward to the Indian Peninsula and southward to the Indonesian Archipelago during the Pluvial periods of the Pleistocene (Menon 1973).

The Poona population of *Crossocheilus* with a reduced number of scales along the lateral line (37-39 as opposed to 39-41 in *C. latius*) seems to be a distinct species evolved in the Deccan Plateau of the Indian Peninsula from the same Pleistocene stock that gave rise to *periyarensis* in the Periyar drainage.

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## ADDITION OF THREE NEW SPECIES OF *CHALCOLEPIS* CANDEZE (COLEOPTERA, ELATERIDAE: HEMIRRHIPINAE) TO THE INDIAN FAUNA<sup>1</sup>

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(With twelve text-figures)

To the previously recorded three Indian species of genus *Chalcolepis* Candèze, three are added. Described and illustrated as new are *C. nigrimaculatus*, *C. truncatus* and *C. emarginatus*. A dichotomous key is provided for all Indian species of this genus.

## INTRODUCTION

Erected by Candèze (1857), the genus *Chalcolepis* remained unreported from the Oriental region, till 1992, when Vats & Kashyap described three new species *C. pannus*, *C. rotundoextremus* and *C. kashyapi*, from India. Candèze established this genus with *C. luczoti* as its type species from Neotropical region. In the present text three more species are added from the Indian region. Holotypes will be submitted to Indian Agricultural Research Institute, Pusa National Collections, Division of Entomology, New Delhi.

This genus is based on a combination of some significant characters which include: Body covered with scales of different colours, with or without distinct patches; antennal segment 2 shorter than 3; elytra truncate at posterior extremities; tarsi furnished below with brushes of hairs; claw simple with setae at base; aedeagus longer than parameres, and parameres simple with or without subapical processes.

### KEY TO INDIAN SPECIES OF GENUS *Chalcolepis* CANDEZE

1. Body covered with scales of three colours intermingled irregularly, with or without prominent patches ..... 2
- Body covered with scales of two colours intermingled irregularly, with prominent patches ..... 4
2. No distinct patches of scales present ..... 3
- Distinct patches of black coloured scales present ..... *nigrimaculatus* sp.nov.

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